

VGLA COE Organizer

Mathematics 3

Place evidence that has been collected for submission behind the VGLA COE Organizer. Cardstock or colored paper may be used to assist in the organization of the COE.

K.1 The student, given two sets containing 10 or fewer concrete items, will		
		identify and
		describe one set as having more, fewer, or the same number of members as the other set, using the concept of one-to-one correspondence.

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K.2 The student, given a set containing 10 or fewer concrete items, will		
a)		tell how many are in the set by counting the number of items orally;
b)		select the corresponding numeral from a given set; and
c)		write the numeral to tell how many are in the set.

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K.3 The student, given an ordered set of three objects and/or pictures, will	
	indicate the ordinal position of each item, first through third, and the ordered position of each item from
	left-to-right,
	right-to-left,
	top-to-bottom, and/or
	bottom-to-top.

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K.4 The student will investigate and recognize patterns from counting by fives and tens to 30, using		
		concrete objects and
		a calculator.

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K.5 The student will		
		count forward to 30 and
		backward from 10.

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1.1 The student will		
		count objects in a given set containing between 1 and 100 objects and
		write the corresponding numeral.

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1.2 The student will group a collection of up to 100 objects into		
		tens and ones and
		write the corresponding numeral to develop an understanding of place value.

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1.3 The student will		
		count forward by ones, fives, and tens to 100,
		by twos to 20, and
		backward by ones from 20.

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1.4 The student will		
		recognize and write numerals 0 through 100.

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1.5 The student will		
		identify the ordinal positions first through tenth, using an ordered set of objects.

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1.6 The student will		
		identify and represent the concepts of one-half and one-fourth, using appropriate materials or a drawing.

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2.1 The student will		
a)		read,
		write, and
		identify the place value of each digit in a three-digit numeral, using numeration models; and
b)		round two-digit numbers to the nearest ten.

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2.2 The student will compare two whole numbers between 0 and 999, using		
		symbols ($>$, $<$, or $=$) and
		words (greater than, less than, or equal to).

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2.3 The student will		
		identify the ordinal positions first through twentieth, using an ordered set of objects.

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2.4 The student will	
	identify the part of a set and/or region that represents fractions for
	one-half,
	one-third,
	one-fourth,
	one-eighth, and
	one-tenth and
	write the corresponding fraction.

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2.5 The student will		
a)		count forward by twos, fives, and tens to 100, starting at various multiples of 2, 5, or 10, using
		mental mathematics,
		paper and pencil,
		hundred chart,
		calculators, and/or
		concrete objects, as appropriate;
b)		count backward by tens from 100;
c)		group objects by threes and fours; and
d)		recognize even and odd numbers, using objects.

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3.1 The student will		
		read and write six-digit numerals and
		identify the place value for each digit.

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3.2 The student will round a whole number, 9,999 or less, to the nearest		
		ten,
		hundred, and
		thousand.

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3.3 The student will compare two whole numbers between 0 and 9,999, using		
		symbols ($>$, $<$, or $=$) and
		words (<i>greater than</i> , <i>less than</i> , or <i>equal to</i>).

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3.4 The student will recognize and use the inverse relationships between		
		addition/subtraction to complete basic fact sentences. *
		multiplication/division to complete basic fact sentences. *
	* Students will use these relationships to solve problems such as $5 + 3 = 8$ and $8 - 3 = \underline{\quad}$	

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3.5 The student will		
a)		divide regions and sets to represent a fraction; and
b)		name and write the fractions represented by a given model
		area/region,
		length/measurement, and
		set
* <i>Fractions (including mixed numbers) will include halves, thirds, fourths, eighths, and tenths.</i>		

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3.6 The student will compare the numerical value of two fractions	
	having like and unlike denominators, using concrete or pictorial models involving
	areas/regions,
	lengths/measurements, and
	sets.

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3.7 The student will read and write decimals expressed as tenths and hundredths, using		
		concrete materials and
		models.

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K.6 The student will		
		add and subtract whole numbers, using up to 10 concrete items.

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1.7 The student, given a familiar problem situation involving magnitude, will		
a)		select a reasonable magnitude from three given quantities:
		a one-digit numeral,
		a two-digit numeral, and
		a three-digit numeral (e.g., 5, 50, and 500); and
b)		explain the reasonableness of his/her choice.

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1.8 The student will		
		recall basic addition facts – i.e., sums to 10 or less – and the corresponding subtraction facts.

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1.9 The student will create and solve story and picture problems involving		
	one-step solutions, using	
		basic addition and
		subtraction facts.

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2.6 The student will		
		recall basic addition facts – i.e., sums to 18 or less - and the corresponding subtraction facts.

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2.7 The student, given two whole numbers whose sum is 99 or less, will		
a)		estimate the sum; and
b)		find the sum, using various methods of calculation
		mental computation,
		concrete materials, and
		paper and pencil.

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2.8 The student, given two whole numbers, each of which is 99 or less, will		
a)		estimate the difference; and
b)		find the difference, using various methods of calculation
		mental computation,
		concrete materials, and
		paper and pencil.

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2.9 The student will create and solve one-step addition and subtraction problems using data from		
		simple tables,
		picture graphs,
		bar graphs, and
		practical situations.

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2.10 The student, given a simple addition or subtraction fact, will		
		recognize and describe the related facts which represent and describe the inverse relationship between addition and subtraction. <i>e.g., $3 + \underline{\quad} = 7$, $\underline{\quad} + 3 = 7$, $7 - 3 = \underline{\quad}$, and $7 - \underline{\quad} = 3$</i>

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3.8 The student will solve problems involving the sum or difference of two whole numbers, each 9,999 or less, with or without regrouping, using various computational methods, including		
		calculators,
		paper and pencil,
		mental computation, and
		estimation.
3.9 The student will recall the		
		multiplication facts through the nines table and
		division facts through the nines table.

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3.10 The student will represent multiplication and division, using area and set models, and create and solve problems that involve		
		multiplication of two whole numbers, one factor 99 or less and the second factor 5 or less

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3.11 The student will add and subtract with proper fractions having like denominators of 10 or less, using concrete materials and pictorial models representing		
		areas/regions,
		lengths/measurements, and
		sets.

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3.12 The student will add and subtract with decimals expressed as tenths, using		
		concrete materials,
		pictorial representations, and
		paper and pencil.

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K.7 The student will		
		recognize a
		penny,
		nickel,
		dime, and
		quarter
		determine the value of a collection of pennies and/or nickels whose total value is 10 cents or less.

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K.8 The student will identify the instruments used to measure		
		length (ruler),
		weight (scale),
		time (clock: digital and analog; calendar: day, month, and season), and
		temperature (thermometer).

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K.9 The student will tell time to the hour, using		
		an analog or digital clock.

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K.10 The student will compare two objects or events, using direct comparisons or nonstandard units of measure, according to one or more of the following attributes:		
		length (shorter, longer),
		height (taller, shorter),
		weight (heavier, lighter),
		temperature (hotter, colder).
<i>Examples of nonstandard units include foot length, hand span, new pencil, paper clip, block.</i>		

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K.11 The student will identify, describe, and draw two-dimensional (plane) geometric figures		
		circle,
		triangle,
		square, and
		rectangle.

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K.12 The student will	
	describe the location of one object relative to another
	above,
	below,
	next to and
	identify representations of plane geometric figures regardless of their position and orientation in space.
	circle,
	triangle,
	square, and
	rectangle

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K.13 The student will compare the	
	size of plane geometric figures
	larger,
	smaller and
	shape of plane geometric figures
	circle,
	triangle,
	square, and
	rectangle.

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1.10 The student will		
a)		identify the number of pennies equivalent to
		a nickel,
		a dime, and
		a quarter;
b)		determine the value of a collection of pennies, nickels, and dimes whose total value is 100 cents or less.

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1.11 The student will tell time to the half-hour, using		
		an analog <u>or</u> digital clock.

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1.12 The student will use nonstandard units to measure		
		length and
		weight.

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1.13 The student will compare the volumes of two given containers by using		
		concrete materials (e.g., jelly beans, sand, water, rice).

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1.14 The student will compare the weight of two objects, using		
		a balance scale.

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1.15 The student will describe the proximity of objects in space		
		near/far,
		close by,
		below/above,
		up/down,
		beside, and
		next to.

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1.16 The student will	
	draw plane geometric figures,
	triangle,
	square,
	rectangle, and
	circle
	describe plane geometric figures, and
	triangle,
	square,
	rectangle, and
	circle
	sort plane geometric figures according to number of sides, corners, and square corners.
	triangle,
	square,
	rectangle, and
	circle

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1.17 The student will identify and describe objects in his/her environment that depict plane geometric figures		
		triangle,
		rectangle,
		square, and
		circle

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2.11 The student will		
a)		count and compare a collection of pennies, nickels, dimes, and quarters whose total value is \$2.00 or less; and
b)		identify the correct usage of the
		cent symbol (¢),
		dollar symbol (\$), and
		decimal point (.).

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2.12 The student will estimate and then use a ruler to make linear measurements to the nearest		
		centimeter and
		inch
	<i>including measuring the distance around a polygon in order to determine perimeter.</i>	

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2.13 The student, given grid paper, will		
		estimate and
		then count the number of square units needed to cover a given surface in order to determine area.

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2.14 The student will		
		estimate and
		then count the number of cubes in a rectangular box in order to determine volume.

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2.15 The student will		
		estimate weight/mass of familiar objects in pounds and/or kilograms and then
		use a scale to determine the weight/mass of familiar objects in pounds and/or kilograms

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2.16 The student will tell and write time to the quarter hour, using		
		analog clocks and
		digital clocks.

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2.17 The student will use actual measuring devices to compare metric and U.S. Customary units (cups, pints, quarts, gallons, and liters) for measuring liquid volume, using the		
		concepts of <i>more, less, and equivalent</i> .

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2.18 The student will		
a)		use calendar language appropriately (e.g., months, today, yesterday, next week, last week);
b)		determine past and future days of the week; and
c)		identify specific dates on a given calendar.

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2.19 The student will		
		read the temperature on a Celsius and/or Fahrenheit thermometer to the nearest 10 degrees.

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2.20 The student will	
	identify three-dimensional (solid) concrete figures, including,
	a cube,
	rectangular solid (prism),
	square pyramid,
	sphere,
	cylinder, and
	cone,
	describe three-dimensional (solid) concrete figures, including,
	a cube,
	rectangular solid (prism),
	square pyramid,
	sphere,
	cylinder, and
	cone,
	sort three-dimensional (solid) concrete figures, according to the number and shape of the solid's faces, edges, and corners including:
	a cube,
	rectangular solid (prism),
	square pyramid,
	sphere,
	cylinder, and
	cone.

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2.21 The student will		
		Identify and
		create figures, symmetric along a line using various concrete materials

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2.22 The student will compare and contrast plane and solid geometric shapes		
		circle/sphere,
		square/cube, and
		rectangle/rectangular solid.

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3.13 The student will determine by counting		
		the value of a collection of bills and coins whose total value is \$5.00 or less, compare the value of the coins or bills, and
		make change.

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3.14 The student will estimate and then use actual measuring devices with metric and U.S. Customary units to measure	
a)	Length
	inches,
	feet,
	yards,
	centimeters, and
	meters;
b)	liquid volume
	cups,
	pints,
	quarts,
	gallons, and
	liters; and
c)	weight/mass
	ounces,
	pounds,
	grams, and
	kilograms.

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3.15 The student will tell time to the nearest		
		five-minute interval using
		analog and
		digital
		minute, using
		analog and
		digital clocks.

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3.16 The student will identify equivalent periods of time, including relationships among		
		days, months, and years,
		minutes and hours.

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3.17 The student will read temperature to the nearest degree from		
		a Celsius thermometer and
		a Fahrenheit thermometer.
	<i>Real thermometers and physical models of thermometers will be used.</i>	

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3.18 The student will	
	analyze two-dimensional (plane) geometric figures including
	circle,
	square,
	rectangle,
	triangle,
	analyze three-dimensional (solid) geometric figures including
	cube,
	rectangular solid [prism],
	square pyramid,
	sphere,
	cone, and
	cylinder
	identify relevant properties, using concrete models, including
	number of corners,
	square corners,
	edges, and
	the number and shape of faces,.

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3.19 The student will		
		identify and
		draw representations of line segments and angles, using a ruler or straightedge.

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3.20 The student, given appropriate drawings or models, will		
		identify and
		describe congruent and symmetrical two-dimensional (plane) figures, using tracing procedures.

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K.14 The student will gather data relating to familiar experiences by		
		counting and
		tallying.

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K.15 The student will display objects and information, using		
		object graphs,
		pictorial graphs, and
		tables.

VGLA COE Organizer

Mathematics 3

Place evidence that has been collected for submission behind the VGLA COE Organizer. Cardstock or colored paper may be used to assist in the organization of the COE.

K.16 The student will		
		investigate and describe the results of dropping a two-colored counter or using a multicolored spinner.

VGLA COE Organizer

Mathematics 3

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1.18 The student will	
	investigate, identify, and describe various forms of data collection in his/her world using
	tables,
	picture graphs, and
	object graphs.
<i>e.g., recording daily temperature, lunch count, attendance, and favorite ice cream</i>	

VGLA COE Organizer

Mathematics 3

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1.19 The student will interpret information displayed in a picture or object graph, using the vocabulary		
		more,
		less,
		fewer,
		greater than,
		less than, and
		equal to.

VGLA COE Organizer

Mathematics 3

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2.23 The student will	
	read a
	simple picture and
	bar graph,
	construct a
	simple picture and
	bar graph.
	interpret a
	simple picture and
	bar graph.

VGLA COE Organizer

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2.24 The student will record data from experiments, using		
		Spinners,
		colored tiles/cubes, and
		use the data to predict which of two events is more likely to occur if the experiment is repeated.

VGLA COE Organizer

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3.21 The student, given grid paper, will		
a)		collect and organize data on a given topic of his/her choice, using observations, measurements, surveys, or experiments; and
b)		construct a line plot, a picture graph, or a bar graph to represent the results. Each graph will include
		an appropriate title and
		key.

VGLA COE Organizer

Mathematics 3

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3.22 The student will		
		read and interpret data represented in
		line plots,
		bar graphs, and
		picture graphs and
		Write a sentence analyzing the data.

VGLA COE Organizer

Mathematics 3

Place evidence that has been collected for submission behind the VGLA COE Organizer. Cardstock or colored paper may be used to assist in the organization of the COE.

3.23 The student will		
		investigate and describe the concept of probability as chance and
		list possible results of a given situation.

VGLA COE Organizer

Mathematics 3

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K.17 The student will	
	sort objects according to similar attributes
	size,
	shape, and
	color
	classify objects according to similar attributes
	size,
	shape, and
	color

VGLA COE Organizer

Mathematics 3

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K.18 The student will identify, describe, and extend a repeating relationship (pattern) found in		
		common objects,
		sounds, and
		movements.

VGLA COE Organizer

Mathematics 3

Place evidence that has been collected for submission behind the VGLA COE Organizer. Cardstock or colored paper may be used to assist in the organization of the COE.

1.20 The student will sort and classify concrete objects according to one or more attributes, including		
		color,
		size,
		shape, and
		thickness.

VGLA COE Organizer

Mathematics 3

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1.21 The student will recognize, describe, extend, and create a wide variety of patterns, including		
		rhythmic,
		color,
		shape, and
		numerical.
<i>Patterns will include both growing and repeating patterns. Concrete materials and calculators will be used by students.</i>		

VGLA COE Organizer

Mathematics 3

Place evidence that has been collected for submission behind the VGLA COE Organizer. Cardstock or colored paper may be used to assist in the organization of the COE.

2.25 The student will identify, create, and extend a wide variety of patterns, using		
		numbers,
		concrete objects, and
		pictures.

VGLA COE Organizer

Mathematics 3

Place evidence that has been collected for submission behind the VGLA COE Organizer. Cardstock or colored paper may be used to assist in the organization of the COE.

2.26 The student will solve problems by completing a numerical sentence involving the		
		basic facts for
		addition and
		subtraction. <i>Examples include: $3 + \underline{\quad} = 7$, or $9 - \underline{\quad} = 2$.</i>
		Students will create story problems, using the numerical sentences.

VGLA COE Organizer

Mathematics 3

Place evidence that has been collected for submission behind the VGLA COE Organizer. Cardstock or colored paper may be used to assist in the organization of the COE.

3.24 The student will recognize and describe a variety of patterns formed using	
	concrete objects,
	numbers,
	tables,
	pictures, and
	extend the pattern, using the same or different forms
	concrete objects,
	numbers,
	tables, and
	pictures.

VGLA COE Organizer

Mathematics 3

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3.25 The student will			
a)			investigate and create patterns involving
			numbers,
			operations (addition and multiplication), and
			relations that model the identity and commutative properties for
			addition
b)			multiplication; and
			demonstrate an understanding of equality by recognizing that the equal sign (=) links equivalent quantities, such as $4 \cdot 3 = 2 \cdot 6$.